Wide Web links. I found the references to web links a nice bonus, the authors cite web sites in the text, so—for example—while reading about the toxicity of *Arnica Montana*, the authors provide the web address to a 1995 Health Canada document on herbs used as non-medicinal ingredients in nonprescription drugs. The web links listed after the selected references section are more plant specific. For example, in the chapter on echinacea the authors cite http://res.agr.ca/lond/pmrc/study/newcrops/echinacea.html, plus nine other sites. The addition of web links makes information readily accessible, and along with the text itself, comprehensive.

Following the information on plants comes chapters devoted to the business of growing medicinal plants, the regulatory and legal framework in Canada for producing and marketing medicinal plants, various hazards, and a general overview of medicinal plant research in Canada. This section is quite interesting- the authors discuss principal determinants of the commercial importance of medicinal plants, marketplace timing, a list of native aromatic, insecticidal, and nutraceutical crops, and a list of non-native medicinal crops that could be grown in Canada. While this section does pay some lip service to conservation and sustainability, it would be nice to see in future editions a full-blown chapter on the subject, with references and web links. There is also a section on medicinal cautions that discusses health fraud and gives recommendations to legislators, regulators, product manufacturers, physicians, and consumers, and discusses herbal remedies in Canadian and American laws. The last 30 pages consist of a list of information resources, such as contacts to Canadian experts, organizations, and publications, an appendix offering a regional review of medicinal plant research in Canada, a list of general references, a list of web sites on medicinal herbs, and finally, a glossary of pharmacological and medical terms relevant to medicinal plants.

I was slightly disappointed that there was no general index and that the authors did not fully address conservation and sustainability but, otherwise *Canadian Medicinal Crops* is a model text for other countries to follow. The sections discussing the business side of the medicinal crop industry were particularly interesting and I'm sure, invaluable to anyone interested in starting a medicinal crop. Even though this book has a target audience (the agricultural community), I wouldn't expect readership to be exclusive. This book would also serve well as part of a medical botany class or as a general reference to anyone interested in Canadian medicinal crops.—*Kevin D. Janni.*

JOHN T. KARTESZ and CHRISTOPHER A. MEACHAM. 1999. **Synthesis of the North American Flora, Version 1.0.** (ISBN 1-889065-05-6). North Carolina Botanical Garden and the University of North Carolina at Chapel Hill, CB #3375, Totten Center, Chapel Hill, NC 27599-3375, U.S.A.

Minimum hardware configuration: Pentium 90 MHz-class processor, 32 megabytes RAM, 25 megabytes free hard disk space, SVGA display (800 X 600 pixel resolution) with 16 colors, Microsoft Windows 3.1, NT, 95, 98, or 2000 operating system, CD-ROM drive for installation, a mouse, and, of course, a keyboard.

This CD-ROM includes an updated version of Kartesz's *A Synonymized Checklist of the Vascular Flora of the United States, Canada, and Greenland*, but it is so much more. Besides being able to switch between thesaurus and checklist format at the click of a mouse, you also have the option of omitting authors from the listing, omitting synonyms completely, or new with the Synthesis, displaying common names. And this is only the tip of the iceberg.

There are many other practical functions packed into this program. They are so numerous and applicable in so many different ways that it's actually a little confusing at first. I'll start with the more straightforward functions. The Synthesis allows you to highlight any taxon from a family, genus, or species list and displays its distribution on a map of the circumscribed area. It also color codes regions (the U.S. is divided into its states, and Canada into its provinces) as to status of the

taxon in terms of noxious, rare, extinct, eradicated, extirpated, or simply present. Another touch is discovered when you hover the cursor over a region and a flag pops up telling you the location of a voucher or in some cases a citation for the species from that region.

Another basic function of the synthesis is the biological attributes window. In its simplest use it displays the biological attributes of the currently selected taxon. Some of the attributes covered are general plant habit (forb, grass, shrub, tree etc.), major plant group (monocot, dicot, fern, gymnosperm etc.), duration (annual, perennial or biennial), nativity (native or exotic), habitat (alpine, aquatic, submerged, floating, wetland etc.), and the list goes on.

These functions alone are worth the investment in the CD. But it is only the beginning of the functions of the program. The rest revolves around three possible queries and four operations you can perform on the queries in numerous Boolean permutations. From here I found it somewhat convoluted if not in design at least in the explanation. The four operations (union, intersection, restricted, and "not") can be performed on any single, pair, or trio of queries (geographic, attributes, or taxonomic). As an example you could select two geographic regions like Texas and North Dakota and perform the union operation on the selection. The program would then highlight all of the species that occur in these two states combined. Further you could add an attribute query such as all annual dicots found in both states. Finally you could add the third query with something like Asteraceae and all annul dicots in the Asteraceae in both states would be highlighted. Besides the taxa in the list being highlighted a table with the number of taxa at each rank is displayed in the lower right hand corner. The intersection operation displays the taxa with the particular attributes or in a particular taxon, if selected, that are common to the chosen geographic regions. The restricted operation displays taxa that are restricted to the selected region or regions. Finally, the "not" operation is the functional opposite of the restricted function and displays all of the species of the circumscribed area _not_ found in the selected region. For example, there are about 28,000 species in the Synthesis (North America north of Mexico) and about 6,000 species in Texas. If the "not" operation were performed on Texas as the selected region the program would display 22,000 species. This may be the least usable of the functions found in the program.

Besides this dizzying array of query/operations combinations there are also several different colors of fonts used in the displayed query lists that carry different kinds of information. This added information takes sometime to sink in and may or may not be useful to some.

All in all, once you spend some time with the program, it is quite usable. It will probably become the standard for its medium just as the Kartesz books have become a standard for the printed medium.—*Robert J. George.*

W.S. Judd, C.S. Campbell, E.A. Kellogg, and P.F. Stevens. 1999. **Plant Systematics: A Phylogenetic Approach**. (ISBN 0-87893-404-9, hbk.). Sinauer Associates, Inc. 23 Plumtree Road, Sunderland, MA 01375, U.S.A. (*publish@sinauer.com;* http://www.sinauer.com/). $67.95, hbk. xvi + 464 pp., with CD-ROM.

I shared the general enthusiasm of many colleagues in the summer of 1999 upon learning of the availability of a new textbook for plant systematics by Judd and colleagues, whose collective depth, breadth, and expertise in taxonomy is considerable. Promotional literature distributed by the publishers indicates the text has been adopted by a considerable number of institutions in the United States. However, this review is mixed because of contradicting interests in the text as a researcher and a teacher of introductory plant systematics.

As a detailed and modern source information for graduate students and thoroughly trained plant systematists, the text is highly recommended. Stated simply, *Plant Systematics* is the only